Technical training.
Product information.

F48 Displays and Controls

BMW Service

General information

Symbols used

The following symbol is used in this document to facilitate better comprehension or to draw attention to very important information:

⚠️

Contains important safety information and information that needs to be observed strictly in order to guarantee the smooth operation of the system.

Information status and national-market versions

BMW Group vehicles meet the requirements of the highest safety and quality standards. Changes in requirements for environmental protection, customer benefits and design render necessary continuous development of systems and components. Consequently, there may be discrepancies between the contents of this document and the vehicles available in the training course.

This document basically relates to the European version of left-hand drive vehicles. Some operating elements or components are arranged differently in right-hand drive vehicles than shown in the graphics in this document. Further differences may arise as a result of the equipment specification in specific markets or countries.

Additional sources of information

Further information on the individual topics can be found in the following:

- Owner's Handbook
- Integrated Service Technical Application.

Contact: conceptinfo@bmw.de

The information contained in this document forms an integral part of the technical training of the BMW Group and is intended for the trainer and participants in the seminar. Refer to the latest relevant information systems of the BMW Group for any changes/additions to the technical data.

F48 Displays and Controls
Contents

F48 Displays and Controls
1. System Overview

Similar to other BMW models, the operating concept of the F48 is designed for clear and optimal structuring of the cockpit. This is achieved primarily through the simplified and logical operation, as well as the clear arrangement of the display and operating elements.

Overview of cockpit of F48

Index	Explanation
1	Instrument cluster (KOMBI)
2	Head-Up Display (HUD)
3	Central information display (CID)
4	Control panel, audio system with favorit buttons
5	Heating/Air-conditioning control panel
6	Dynamic Stability Control button
7	Driving experience switch
8	Park Distance Control button
9	Hill Descent Control button
10	Controller (CON)
11	Parking brake button

F48 Displays and Controls

2. Instrument Cluster

F48 versions of instrument clusters

Index	Instrument cluster	Display	Equipment
1	High version	5.7" TFT display	• Navigation Plus (SA 6UP) and/or • Driving Assistant (SA 5AS) and/or • Head-Up Display (SA 610).

The F48 has two instrument clusters, which are known from other BMW models:

- High version of instrument cluster.

F48 Displays and Controls
3. Head-Up Display

The Head-Up Display (SA 610) projects a virtual image into the driver's field of view. The driver thus always has important information such as the driving speed and Check Control messages directly in his field of view.

The HUD in the F48 can project the colors red, green and blue. Contents can be displayed in all colors of the RGB color spectrum, as is the case with an LCD monitor, by mixing the three colors.

The Head-Up Display (HUD) for the F48 is not connected to a CAN bus, but is connected directly to the instrument cluster via an Automotive Pixel Link interface. Fault code entries are entered in the instrument cluster.

3.1. Functional principle

The HUD is similar to a projector. A light source is required to project the HUD information. Two white LEDs serve as the light source. The light is directed through a lens onto a TFT projection display where the screen contents are displayed. The TFT projection display can be compared to a filter which admits or blocks light.

An optical imaging element determines the shape, distance and size of the HUD images.
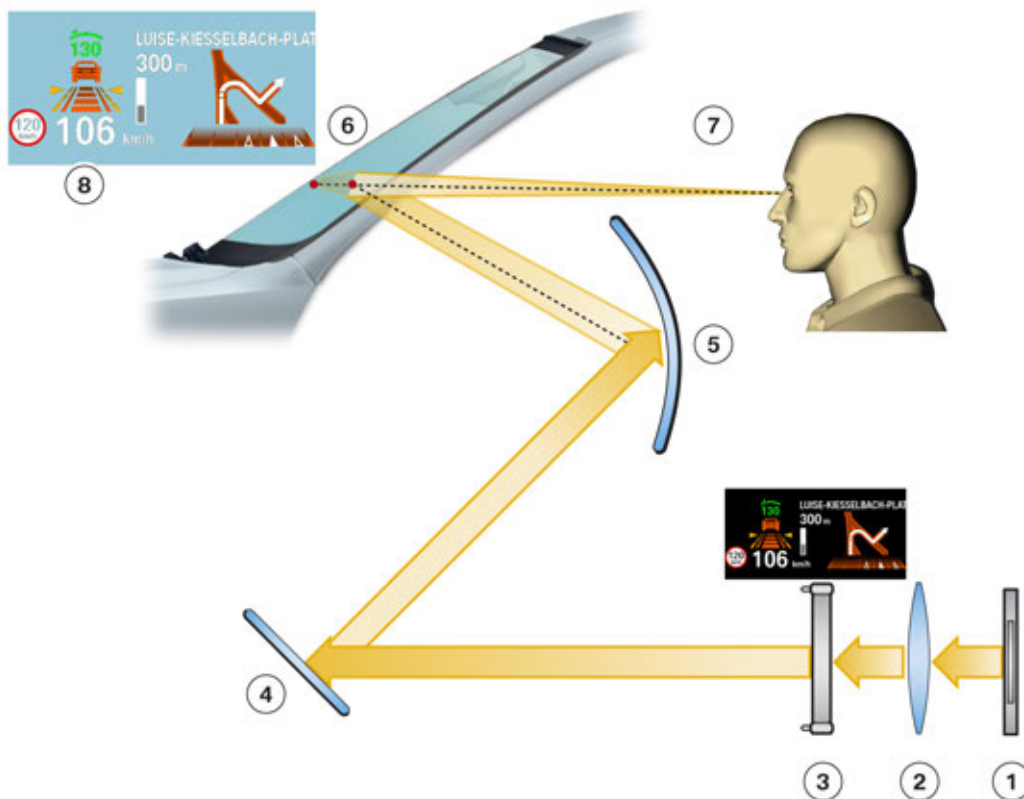
Principle of Head-Up Display

F48 Displays and Controls
3. Head-Up Display

Index	Explanation
1	Light source
2	Lens
3	TFT projection display
4	Plane mirror
5	Curved mirror
6	Windshield
7	Observer's point of vision
8	Projected image

The image appears to float freely over the roadway, projected on the windshield.

The windshield is a "special pane" and important element in the projection of the displays.
The outer and inner glass panes are bonded to a plastic film, just like in the standard windshield.
However, unlike in the standard windshield, this plastic film is not parallel but is tapered over the entire area of the windshield.
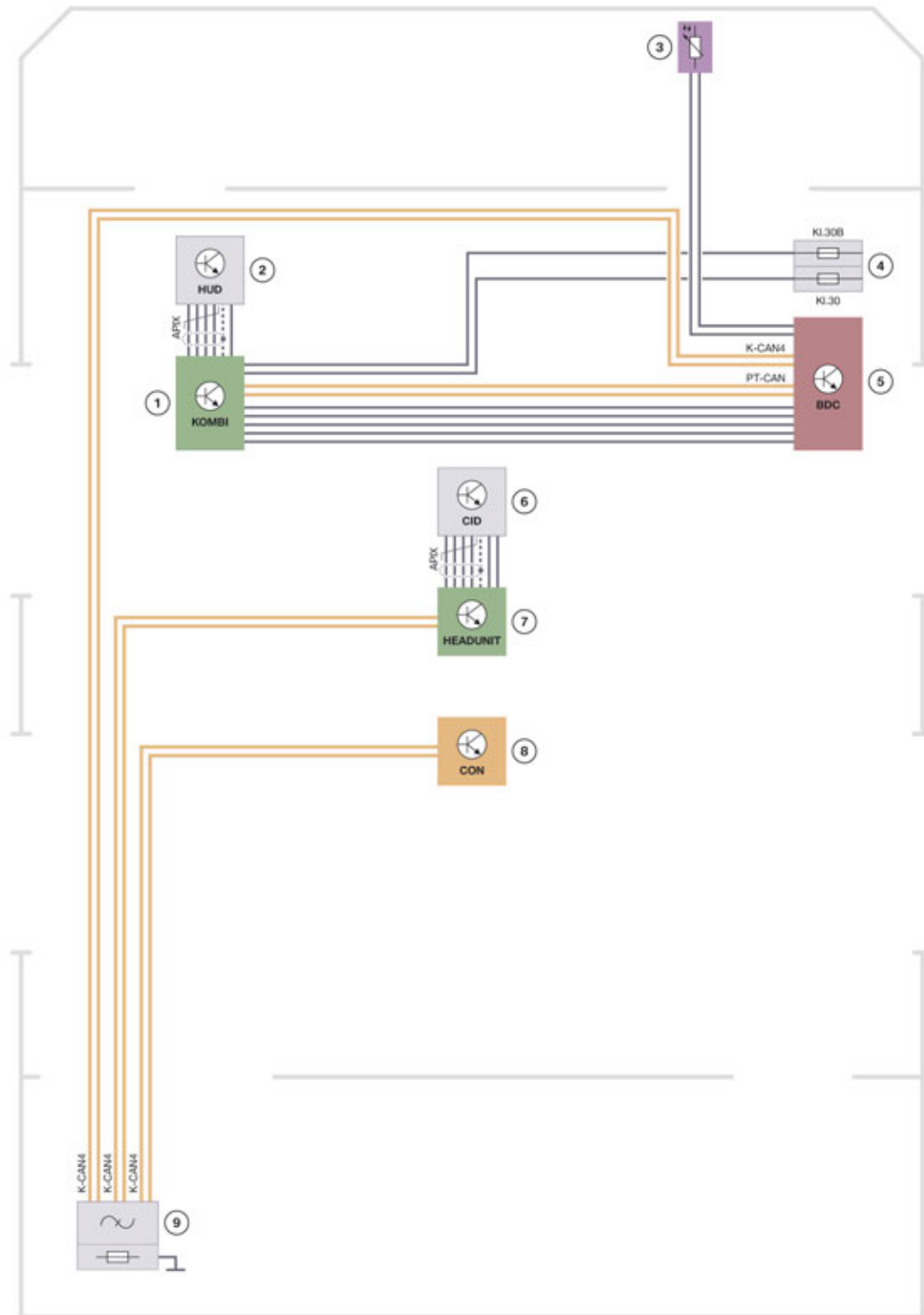
The head-up display is fitted above the steering column, immediately behind the instrument cluster.
It is secured to the bulkhead supporting structure using three screws.

F48 Displays and Controls

3. Head-Up Display

3.2. System wiring diagram

F48 system wiring diagram of Head-Up Display

F48 Displays and Controls
3. Head-Up Display

Index	Description
1	Instrument cluster (KOMBI)
2	Head-Up Display (HUD)
3	Ambient temperature sensor
4	Power distribution box, front
5	Body Domain Controller (BDC)
6	Central Information Display (CID)
7	Headunit
8	Controller (CON)
9	K-CAN-Terminator

3.3. Displays

Depending on the vehicle equipment, the displays of the Head-Up Display contain information relevant to the driver, such as:

- Speed
- Set speed regulation by the cruise control with braking function (DCC)
- Navigation system
- Check Control messages
- Speed limit information
- Lane departure warning
- Night Vision with person recognition

F48 Displays and Controls
4. Central Information Display

Depending on the equipment installed, two different versions of a central information display are installed in the F48.

The CID in the F48 is directly connected to the headunit via an Automotive Pixel Link interface. Fault code entries are stored in the headunit.

4.1. Overview

F48 Overview of central information display

Index	Explanation
1	Central information display with 8.8" screen diagonal; resolution 1280 x 480 pixels
2	Central information display with 6.5" screen diagonal; resolution 800 x 480 pixels

F48 Displays and Controls
4. Central Information Display

4.2. 6.5" screen diagonal

A CID with 6.5" screen diagonal is installed with the installation of a Headunit Basis with the equipment **Media System** or **Navigation (SA 6UN)**.

4.3. 8.8" screen diagonal

A CID with 8.8" screen diagonal is installed in conjunction with the Headunit Basis and the optional equipment **Navigation Plus (SA 6UP)**. The 8.8" CID also has an anti-reflective glass cover.

F48 Displays and Controls
5. Controller

5.1. Overview

Depending on equipment, the F48 has two different controllers with direct access keys:

- 7-button
- Touch controller

The controller variants based on the different optional equipment can be found in the following table:

| Equipment	Headunit	Controller	Central information display
Navigation (SA 6UN)	Headunit Basis **with** navigation		6.5"
Navigation Plus (SA 6UP)	Headunit High **with** navigation		8.8"

F48 Displays and Controls
5. Controller

5.2. Touch Controller

Vehicles with the optional equipment Navigation Plus (SA 6UP) have a controller with touch control panel.

In the Touch Controller the customer can input location information for the navigation system or telephone numbers and contact details. In the interactive map, the map section, for example, can be moved and enlarged or reduced by finger movement.

The input of characters with the wordmatch principle is detected at an angle of 45°.
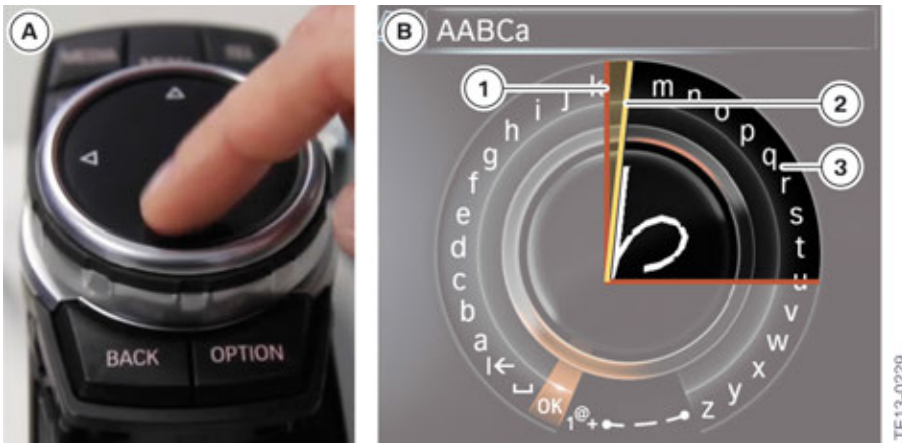
Input area, Touch Controller

Index	Explanation
A	Input using Touch Controller
B	Displays in central information display (CID)
1	Edge of angular range for input
2	"Angle" of input
3	Angular range for input

F48 Displays and Controls
5. Controller

For the evaluation of inputs an additional control unit "Touchbox" is used in separate country versions.

F48 Touchbox control unit

The Touchbox control unit is required for interpreting the contact sensors of the Touch Controller for the Headunit High user interface. The Touchbox is connected to the Touch Controller and headunit via the K-CAN4.

F48 Displays and Controls

6. Driving Experience Switch

F48 Driving experience switch

Index	Explanation
1	Driving experience switch

6.1. Modes

The following program can be selected for the F48:

- SPORT
- COMFORT
- ECO PRO

6.1.1. SPORT mode

In SPORT mode the accelerator pedal characteristic curve in the throttle and the shifting points in vehicles with an automatic transmission have a sporty design. If the vehicle has the optional equipment Dynamic Damper Control (SA 223), the corresponding chassis components also have a sporty design.

6.1.2. COMFORT mode

COMFORT mode is the "normal" mode of the vehicle. COMFORT mode is active upon every engine start, regardless of the mode in which the parked vehicle was previously.

6.1.3. ECO PRO mode

The ECO PRO mode supports the driver in adopting an optimized-consumption driving style and reduces fuel consumption through intelligent control of energy and A/C management. The number and length of the automatic engine start/stop function phases are maximized in ECO PRO mode.

F48 Displays and Controls

7. Intelligent Safety Button

Using the Intelligent Safety button, certain assistance systems of the F48 can be activated, deactivated and individualized.

In the F48, the Intelligent Safety button is only installed with the optional equipment Driving Assistant (SA 5AS). A description of the optional equipment Driving Assistant (SA 5AS) can be found in the section "F48 Driver Assistance Systems".

The Intelligent Safety button together with the hazard warning switch is located below the central information display (CID).

F48 Intelligent Safety button

Index	Explanation
1	Intelligent Safety button

Press button:

- A board on the central information display (CID) is displayed on which the settings can be performed. The individual settings are stored for the ID transmitter currently used.

Press button briefly:

- Intelligent Safety systems are switched off individually depending on the Personal Profile.
- The LED in the Intelligent Safety button lights up orange or goes out, depending on the Personal Profile.

Press button again:

- All Intelligent Safety systems are switched on.
- The LED in the Intelligent Safety button lights up green.

Press and hold button:

- All Intelligent Safety systems are switched off.
- The LED in the Intelligent Safety button goes out.

F48 Displays and Controls
8. Service

8.1. Activation of the Service menu

The activation of the Service menu for a Headunit Basis is identical to the activation of the Service menu of a Headunit High.

The following steps explain how you can activate the Service menu:

- Call up main menu
- Move controller **to the front for longer than 10 seconds**
- **Turn** controller **to the right 3 steps**
- **Turn** controller **to the left 3 steps**
- **Turn** controller **to the right 1 step**
- **Turn** controller **to the left 1 step**
- **Turn** controller **to the right 1 step**
- Press controller **once**

The Service menu is then added as an additional submenu in the "Settings" menu.

8.2. Showroom mode for Head-Up Display

There is a Showroom mode for the Head-Up Display (HUD), with which the various displays of the Head-Up Display can be shown.
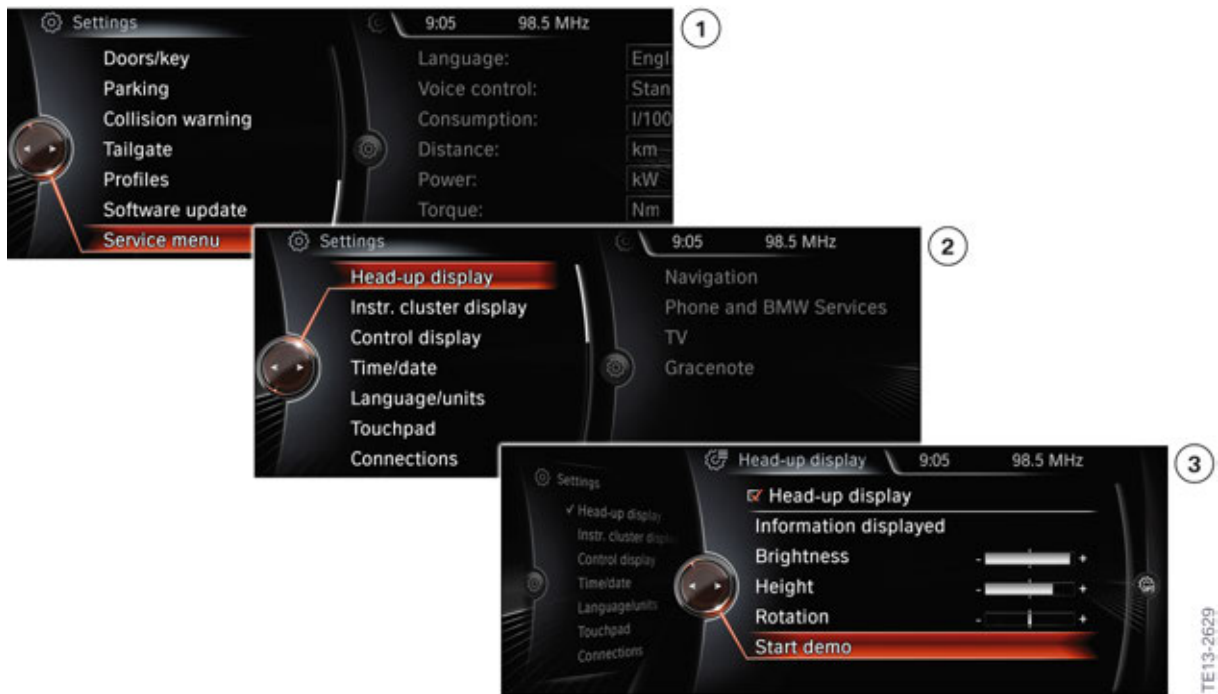
The following steps must be observed for the activation:

- Head-Up Display must be active
- Call up "Head-Up Display" menu
- Switch Head-Up Display on/off 3 times

Alternatively, Showroom mode can also be activated using the diagnosis system.

F48 Displays and Controls

8. Service

F48 Head-Up Display, Showroom mode

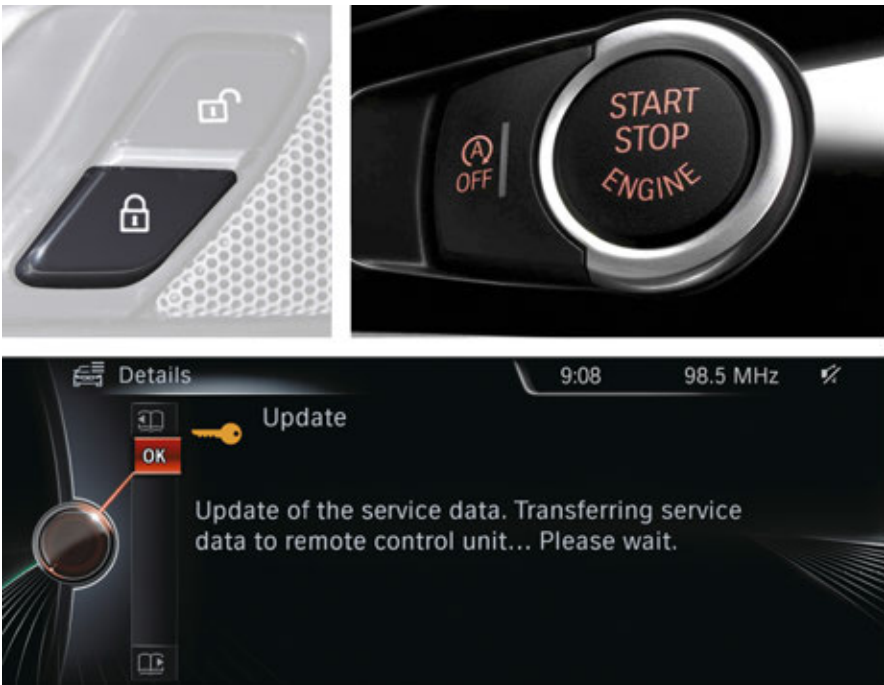| Index	Explanation
1	Service menu
2	"Settings" menu
3	Showroom mode for Head-Up Display in the "Head-Up Display" menu

F48 Displays and Controls

8. Service

8.3. Updating Service key data

The service data are adjusted at regular intervals using the ID transmitter. If the data of the ID transmitter is not up-to-date, there is the option for Service to manually initiate the transfer.

Proceed as follows to transfer current service data to the ID transmitter during Service:

- Keep the central locking button in the driver's door pressed down and then press the start/stop button (terminal 15 ON), then release both buttons.

- Hold the ID transmitter within 10 seconds at the key symbol on the right side of the steering column shroud.

F48 Updating Service key data